ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 121690-, Forsyth County
STP00-1336-00(011)
SR 9 Widening from SR 141 to SR 20

OFFICE Preconstruction

DATE May 13, 2008

FROM for Genetha Rice-Singleton, Assistant Director of Preconstruction

TO SEE DISTRIBUTION

SUBJECT **APPROVED REVISED PROJECT CONCEPT REPORT**

Attached for your files is the approval for subject project.

Attachment

DISTRIBUTION:

Brian Summers
Glenn Bowman
Ken Thompson
Michael Henry
Keith Golden
Angela Alexander
Paul Liles
Babs Abubakari
Russell McMurry
Robert Mahoney
BOARD MEMBER

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: STP-1336(11) Forsyth
P.I. No.: 121690
S.R. 9 Widening from S.R. 141 to S.R. 20

OFFICE: Consultant Design

DATE: March 31, 2008

FROM: for Mohammed (Babs) Abubakari, P.E.
State Consultant Design and Program Delivery Engineer

TO: Genetha Rice-Singleton, Assistant Director of Preconstruction

SUBJECT: **Revised Project Concept Report**

Attached is the original copy of the Revised Concept Report for your further handling and approval in accordance with the Plan Development Process (PDP).

A Concept Report was approved on November 14, 1990 under the previous project number FR-114-1(74) and a Revised Concept Report extending the project 2100 feet north was approved on August 10, 1992. The Location & Design Report approved on October 21, 1997 addressed the speed design being lowered from 55 mph to 45 mph and established an urban section for the entire length of the project. The purpose of this Revised Concept Report is to change the 20-foot raised median to a 16-foot raised median, include an 8-foot multi-use trail on both sides in the 16-foot outside graded shoulders and reduce the normal right of way width from 150 feet to 96 feet.

VE Recommendation

The revised concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP).

Date 4-18-09.

State Transportation Planning Administrator

MBA:SH:vcp

Distribution:

Cc: Brian Summers, Project Review Engineer
Glenn Bowman, State Environment/Location Engineer
Keith Golden, State Traffic Safety and Design Engineer
Angela Alexander, State Transportation Planning Administrator
Jamie Simpson, State Financial Management Administrator
Russell McMurry, District One Engineer
Paul Liles, Bridge Design

REVISED PROJECT CONCEPT REPORT

Need and Purpose:
The original statement of need and purpose is included in the concept report approved November 14, 1990. See Attachment #7.

Project Location:
The proposed project is located in the southern part of Forsyth County, north of the S.R. 141/S.R. 9 intersection, west of S.R. 400. This project begins approximately 1000 feet north of the S.R. 141/S.R. 9 intersection at M.P. 7.14, and will end approximately 1500 feet north of the S.R. 9/S.R. 20 intersection at M.P. 10.06, just south of the Cumming city limits. The length of the proposed project is approximately 2.92 miles.

Description of the approved concept:
In the original concept report approved November 14, 1990, Project STP-1336(11), formerly Project FR-114-1(74), consisted of a 2.4 mile widening of S.R. 9 from S.R.141 to Atlanta Road Relocation. The proposed design included two (2) 12-foot lanes in each direction with a 20-foot raised median and 10-foot outside rural shoulders with 4-foot paved. The horizontal and vertical alignments would be corrected to meet a 55 MPH design speed with a require right-of-way of 150-feet minimum.

In the Revised Concept Report approved August 10, 1992 the project was extended approximately 2,100 feet north to S.R. 20. The extension would have a 20-foot raised median and the shoulders would be a 10 foot wide urban type.

In the Location & Design Report approved October 21, 1997, the concept update section included reference to an approval from the Traffic Operations Office dated September 17, 1991, reducing the speed limit from 55 mph to 45 mph and therefore allowing the use of curb and gutter for the entire length of the project.

PDP Classification: Major __X__ Minor _____

Federal Oversight: Full Oversight ( ), Exempt (X), State Funded ( ), or Other ( )

Functional Classification: Urban Minor Arterial

U.S. Route Number(s): N/A **State Route Number(s):** S.R. 9

Traffic (AADT) as shown in the approved concept :
Base Year (1996): 13,800 Design Year (2016): 22,600

Proposed features to be revised:

- The proposed raised median will be 16-foot wide.
- The proposed outside shoulder will be a 16-foot urban shoulder on each side containing curb and gutter and an 8-foot multi-use path. There will be a 3-foot utility strip between the back of curb and sidewalk.
- The normal right-of-way corridor will be revised from 150 feet to 96 feet.

Describe the revised feature(s) to be approved:

- Proposed Typical Section: The raised median width will be changed from the original width of 20-feet to a 16-foot raised median with 8" x 24" curb and gutter to reduce the Right-of-Way footprint and provide better sight lines at left turn lanes. This was recommended and approved by the Department in the value Engineering Study Alternatives approved July 30, 2007.
- Proposed Typical Section: Outside shoulder width will be changed from 10-foot wide urban type, as described in the 1992 Revised Concept Report, to a 16-foot shoulder on each side containing curb and gutter and an 8-foot multi-use path. This revision is to meet current Georgia Department of Transportation (GDOT) design policy for shoulder design per Table 6.5 (Typical Lane and Shoulder widths) Chapter 6, Section 6.2.1 page 6-6 in GDOT design Policy Manual.
- Right-of-Way requirements will be reduced from the 150-foot minimum, as called for in the original Concept Report, to a 96-foot minimum. This change is to minimize the required right-of-way for the project and is in accordance with the recommended Alternative S-12 from the Value Engineering Study, approved July 30, 2007. Also, right-of-way limits may change as a result of minimizing or possibly eliminating impacts to adjunct property, historic resources, and/or endangered species.

Updated traffic data (AADT):

Base Year (2012): 28,586 Design Year (2032): 42,477

Programmed/Schedule:

P.E.: 2007 R/W: 2008 Construction: 2010

Value Engineering Study: Approved July 30, 2007

Revised Cost Estimates:

1. Construction cost including E&C, $14,723,447 ~~$14,551,475~~
2. Right-of-Way, and $ 33,693,700
3. Utilities. $ 1,648,337

DLL 4/22/08

Is the project located in a Non-attainment area? X **Yes** _____ **No**

The proposed capacity improvement project is consistent with the conforming plan in the

Atlanta Regional Commission (ARC) 2030 mobility model showing two (2) travel lanes in each direction. The Transportation Improvement Program (TIP) description includes the same project limits.

Recommendation: Recommend that the proposed revision to the concept be approved for implementation.

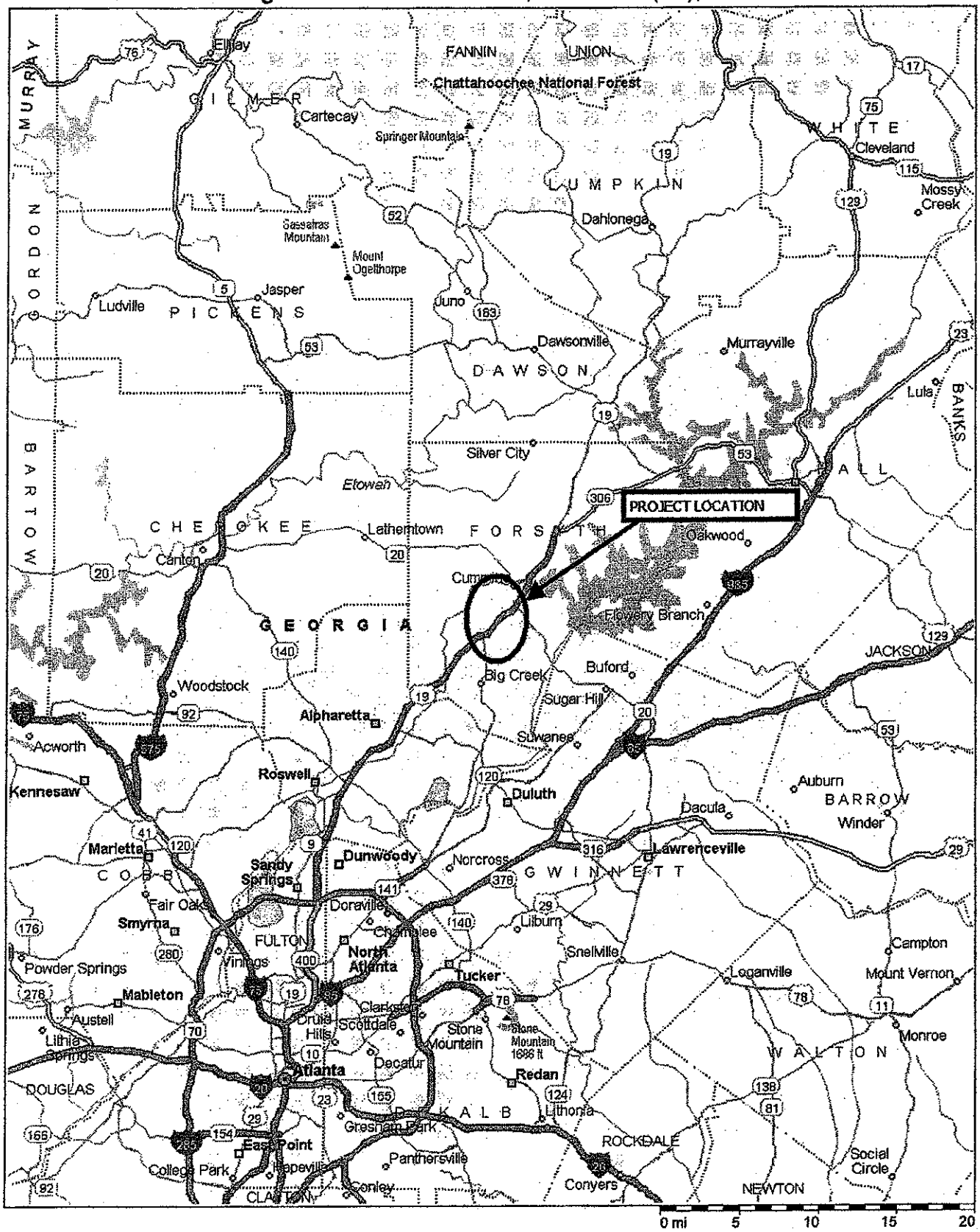
Attachments:

1. Sketch Map
2. Need and Purpose, Approved August 16, 2007
3. Typical Section,
4. Cost Estimate,
5. Conforming plan's network schematics showing thru lanes, and

Concur: _____
Director of Preconstruction

Approve: _____
Chief Engineer

SR 9 Widening from SR 141 to SR 20, STP-1336(11), P.I. No. 121690



Letourneau, Bryon

From: Barker, Todd
Sent: Thursday, August 16, 2007 6:01 PM
To: Crane, Jason
Cc: Mitchell, Ulysses; Pegram, Vinesha C.; Letourneau, Bryon
Subject: RE: SR 9 Need and Purpose Statement

Thanks for reviewing it so quickly!

From: Crane, Jason [mailto:Jason.Crane@dot.state.ga.us]
Sent: Thursday, August 16, 2007 3:55 PM
To: Barker, Todd
Cc: Mitchell, Ulysses; Pegram, Vinesha C.
Subject: RE: SR 9 Need and Purpose Statement

Todd,

The N&P is approved.

Jason Crane
Urban Systems Planning Engineer
jason.crane@dot.state.ga.us
Phone: (404) 463-0010
Fax: (404) 657-5228
Room 326
#2 Capitol Square, S.W.
Atlanta, GA 30334

From: Todd.Barker@kimley-horn.com [mailto:Todd.Barker@kimley-horn.com]
Sent: Thursday, August 09, 2007 11:45 AM
To: Crane, Jason; Mitchell, Ulysses
Cc: Bryon.Letourneau@kimley-horn.com; Pegram, Vinesha C.
Subject: SR 9 Need and Purpose Statement

Jason

Thanks for the clarification on the environmental justice section. Attached is our draft Need and Purpose statement for PI 121690. I appreciate the guidance information from Ulysses and you, and we tried to follow it as much as possible. I also compared it to Matt Fowler's approved statement for Eisenhower Parkway for content. We have limited discussion of future build alternative conditions, to be consistent with FHWA procedures. Please let me know of any questions, and I will provide a quick turnaround of any edits.

Thanks again

Todd
<<Need and Purpose 121690.pdf>> <<Figure 1 - Location Map.pdf>> <<Figure 2 - Adjacent Projects.pdf>>

Todd A. Barker, AICP
Kimley-Horn and Associates, Inc.
3169 Holcomb Bridge Road
Suite 600

Norcross, Georgia 30071
678.533.3918 office
678.469.1600 cell
770.825.0074 fax

Need and Purpose Statement
PI 121690
SR 9 Widening SR 141 to SR 20
Forsyth County

Rapid growth has occurred during the past 20 years in and around the City of Cumming in Forsyth County. Traffic congestion has begun to occur as a result of retail development near the intersection of SR 9 and SR 20, the build-out of residential subdivisions between SR 20 and SR 141, and increased use of the overall SR 9 corridor as a major north-south route between downtown Atlanta and Forsyth County. The annual average daily traffic (ADT) volumes more than doubled since 1989, from 9,000 vehicles per day (VPD) to 19,500 VPD in 2007. Traffic volumes are projected to reach 42,477 VPD by 2032.

The purpose of the proposed project is to improve the capacity and safety of SR 9 between SR 141 and SR 20. The improvements would address the needs of reducing projected levels of congestion and reducing the potential for accidents.

Background and Planning Process History

The proposed widening of SR 9 from SR 141 to SR 20 has been considered since the late 1980's. Environmental and design studies were completed originally in the early 1990's but not implemented due to lack of funding. During subsequent years, it has been included in the Atlanta Regional Commission's Long-Range Transportation Plan. The project is one of a series of capacity improvements on SR 9, currently appearing in the 2030 Mobility Plan and its 2006-2011 Transportation Improvement Program (TIP) as project FT-001D.

Supporting Facts for Project Need

Existing Traffic Conditions

Recent ADT volumes are summarized in **Table 1** based on the GDOT Traffic Count Data records for the only count station in the middle of the project limits, located approximately 0.25 mile north of Piney Grove Road.

Table 1
Average Daily Traffic on SR 9
2000-2006

Year	Count Station #0005
2006	18,360
2005	12,520
2004	12,823
2003	12,356
2002	11,626
2001	11,014
2000	10,971

Source: Kimley-Horn and Associates, Inc., 2007.

Three 24-hour automatic tube and truck classification counts were conducted in October 2006. The results were applied to existing laneage and intersections to estimate existing ADT volumes along the project corridor. **Table 2** shows the ADT near the southern limit, middle, and northern limit of the project area.

Table 2
Average Daily Traffic on SR 9
Existing Year (2006)

Location	Vehicles Per Day
South of Pendley Road	17,410
North of Valley Hill Circle	19,521
North of Old Atlanta Road	17,041

Source: Kimley-Horn and Associates, Inc., 2006.

The 2006 data indicate that the existing two-lane roadway already experiences congestion as the volumes reach and exceed the typical daily capacity of 16,000 (based on Highway Capacity Manual data). A ratio of volume to capacity (V/C) provides a planning level indication of the roadway's level of traffic service. The level-of-service (LOS) is described in levels from A to F, with 'A' representing free-flow conditions and 'F' representing severe delays with stop-and-go conditions. To indicate the existing LOS along SR 9, the V/C ratios were estimated and compared with thresholds used by Georgia Department of Transportation (GDOT) Planning since the 1960s. The existing V/C and LOS are shown in **Table 3**. A V/C of 1.0 indicates that a road has reached capacity, with ratios greater than 1.0 representing undesirable congestions levels (D to F).

Table 3 Volume to Capacity and Levels of Service Existing Year (2006)		
Location	**V/C Ratio**	**LOS**
South of Pendley Road	1.09	(D)
North of Valley Hill Circle	1.07	(D)
North of Old Atlanta Road	1.22	(E)

Source: Kimley-Horn and Associates, Inc., 2007.

The existing LOS also can be evaluated in seconds of intersection delay, as shown in **Table 4**. Based on an analysis conducted with Synchro 6.0 software, all signalized intersections operate at LOS D or better during the AM and PM peak hours in existing (2006) conditions.

Table 4 Level of Service Summary Existing Year 2006 Signalized & Unsignalized Intersections			
Intersection	**Signal Control**	**Overall LOS (Delay in Seconds)**	
		AM Peak	**PM Peak**
SR 9/Pendley Road	*Signalized*	B (15.4)	D (36.0)
SR 9/Piney Grove Road	*Unsignalized*		
Eastbound approach		F (152.7)	F (95.9)
SR 9/Redi Road	*Unsignalized*		
Eastbound approach		F (64.8)	F (112.4)
Westbound approach		E (44.8)	E (35.7)
SR 9/Valley Hill Circle South	*Unsignalized*		
Westbound approach		E (39.2)	E (36.8)
SR 9/Valley Hill Circle North	*Unsignalized*		
Westbound approach		B (11.3)	C (16.8)
SR 9/Old Atlanta Road	*Signalized*	B (14.1)	B (15.1)
SR 9/Hutchinson Road	*Signalized*	B (11.3)	B (13.2)
SR 9/SR 20	*Signalized*	C (25.5)	C (29.6)

Source: Kimley-Horn and Associates, Inc., 2007.

All unsignalized intersections operate at LOS E or F during both the AM and PM peak hours except SR 9 at Valley Hill Circle North, which operates at LOS B during the AM peak hour and LOS C during the PM peak hour. This condition is indicative of major congestion on SR 9 during commuting hours, with limited opportunities for side street traffic to turn onto the through lanes.

Safety

The three-year accident data for the segment (SR 9 from Pendley Road to SR 20) indicates 443 total accidents with 132 total injuries and 2 fatalities. Additionally, in 2005, the statewide average accident rate for this segment of SR 9 was computed to be about 2.18 times the accident rate on comparable roads. During the three year period, accident data indicates that 2 fatalities occurred in 2005 along this segment of SR 9. **Table 5** summarizes the accident history.

Table 5
Accident History (2003-2005)
SR 9 from Pendley Road to SR 20: Urban Minor Arterial

Year	Number of Accidents	Number of Injuries	Number of Fatalities	Accident Rate	Injury Rate	Fatality Rate	Statewide Average Accident Rate	Statewide Average Injury Rate	Statewide Average Fatality Rate[1]
2003	144	41	0	1,277	364	0	585	223	1.51
2004	162	41	0	1,384	350	0	509	194	1.44
2005	137	50	2	1,199	438	18	554	213	1.63

Source: Kimley-Horn and Associates, Inc., 2007.

Further analysis of the accident data reveals that the majority of these accidents were rear-end collisions. The second most frequent type of accident was angle collisions. Both accident types are typical indicators of congestion corridors. Stop-and-go conditions require constant driver attention to avoid minor rear-end collisions. Driver frustrations at delays on the side streets can lead to unsuccessful turning movements ahead of oncoming traffic, leading to higher frequency of angle collisions. These accident types would be reduced with increased capacity, additional intersection signalization where warranted, and a wider section to allow for some type of median.

Another safety concern is a series of horizontal and vertical curves that affect sight distance and safe driving speeds. Improvements to curves between Piney Grove Road and Hutchinson Road would enhance overall traffic safety.

Land Use

The intersection of SR 20 and SR 9 is a primary commercial destination for Forsyth County residents. Development of the Lanier Crossing Shopping Center in the early 1990s became a catalyst for adjacent development. In addition, a major new retail development, Avenue at Forsyth is under construction and scheduled to open by 2008 along SR 141 at its intersection with SR 9. Between the two (2) intersections, the existing land uses consist primarily of single- and

multi-family subdivisions, commercial strip centers, one industrial business, and automobile dealerships. All parcels fronting SR 9 are developed as residential or commercial uses, for sale as commercial property, or under construction as new retail properties. According to Forsyth County Long-Range Planning staff, the Future Land Use plan (adopted in 2005 and currently undergoing an update) proposes commercial redevelopment along with existing residential uses. The existing and future land uses will contribute to congestion levels as daily trips increase for retail activities and employment.

Projected Traffic Conditions

While congestion occurs in the existing conditions, the project's needs are primarily defined by estimated future conditions. A base year was developed to represent the likely first year improvements could be operational. A growth rate of 5% per year for 6 years was applied to the existing 2006 peak hour traffic volumes to determine Base Year 2012 traffic volumes. To estimate future conditions in the typical 20-year horizon, the Base Year 2012 traffic volumes were grown with a factor of 2% per year through 2032. The design year ADT volumes are shown in **Table 6.**

Table 6
Average Daily Traffic on SR 9
Design Year (2032)

Location	Vehicles Per Day
South of Pendley Road	31,423
North of Valley Hill Circle	30,758
North of Old Atlanta Road	35,235

Source: Kimley-Horn and Associates, Inc., 2007.

Based on the 2032 ADT volumes, future conditions were estimated on SR 9 with the same assumptions and thresholds that were used for existing conditions. The estimated volume to capacity ratios suggest that overall growth in the corridor will lead to worsening congestion, as volumes double the typical capacity of a two-lane road (see **Table 7**).

Table 7
Volume to Capacity and Levels of Service on SR 9
Design Year (2032)

Location	V/C Ratio	LOS
North of Pendley Road	1.96	(F)
North of Valley Hill Circle	1.92	(F)
North of Old Atlanta Road	2.2	(F)

Source: Kimley-Horn and Associates, Inc., 2007.

As congestion increases in the corridor, similar conditions would be expected at signalized intersections. Based on Synchro 6.0 analyses using 2032 conditions, all signalized intersections are projected to operate at LOS E or F during peak hours except for Hutchinson Road, with an LOS C during the AM peak hours. All unsignalized intersections are projected to operate at LOS E or F during peak hours except at Valley Hill Circle North, which is projected to operate at LOS C during the AM peak hour. **Table 8** summarizes the seconds of delay and LOS for each intersection in 2032.

The projected 2032 conditions provide a reasonable depiction of the No-Build Alternative in that traffic growth would occur within the project area regardless of improvements, due to adjacent development and overall growth of commuting traffic on SR 9. The 2032 No-Build conditions assume that no capacity improvements would be made on SR 9.

Table 8
Level of Service Summary for SR 9 Intersections
Design Year (2032)
Signalized & Unsignalized Intersections

Intersection	Signal Control	Overall LOS (Delay in Seconds)	
		AM Peak	PM Peak
SR 9/Pendley Road	*Signalized*	F (161.5)	F (276.5)
SR 9/Piney Grove Road	*Unsignalized*		
Eastbound approach		F (N/A)	F (N/A)
SR 9/Redi Road	*Unsignalized*		
Eastbound approach		F (N/A)	F (N/A)
Westbound approach		F (1,871.8)	F (1,028.4)
SR 9/Valley Hill Circle South	*Unsignalized*		
Westbound approach		F (298.1)	F (295.5)
SR 9/Valley Hill Circle North	*Unsignalized*		
Westbound approach		C (15.9)	E (48.7)
SR 9/Old Atlanta Road	*Signalized*	E (65.0)	F (99.1)
SR 9/Hutchinson Road	*Signalized*	D (50.9)	E (61.7)
SR 9/SR 20	*Signalized*	E (56.5)	F (109.6)

Source: Kimley-Horn and Associates, Inc., 2007.

Other adjacent development and programmed projects could occur. This No-Build scenario provides a basis to evaluate a future Build Alternative as part of the planning process in later project development phases. Preliminary traffic analyses indicate that increasing the capacity by two lanes would provide an adequate level of traffic service on SR 9 (LOS C or B) and its major intersections with 2032 conditions.

Logical Termini and System Linkage

Logical termini refers to defining a project's limits so that the transportation needs can be adequately addressed by the proposed improvements. The term is primarily used in context of anticipated federal funding for a proposed project and therefore has a specific definition by Federal Highway Administration. To demonstrate logical termini, the project must show that it:

- Connects at logical points and is of sufficient length
- Has independent utility or function
- Does not restrict consideration of alternates for other reasonable foreseeable improvements.

The proposed project (PI 121690) begins in the south at the intersection approach approximately 1,000 feet south of SR 141 (Peachtree Parkway). The northern project limit is approximately 1,000 feet north of SR 20 (Buford Highway) where the intersection tapers back into SR 9. These limits enable adequate consideration of build alternatives, would be compatible with potential intersection modifications, and would enable traffic benefits within the project area. To meet the definition of logical termini for FHWA planning and funding purposes, the project is considered part of an overall corridor that includes other contiguous improvements to SR 9. The adjacent projects are summarized below:

- PI 141890, STP-1336(13): SR 9 is proposed to be widening from SR 20 to SR 306, to address capacity and safety needs. Environmental and design phases are programmed to start in 2008.
- PI 0008357, CCSTP-0008-00(357): SR 9 is proposed to be widening from SR 371 to SR 141, to address capacity and safety needs. All phases of planning, design, and construction are proposed beyond 2012 (long-range).
- PI 121980, STP-104-1(39): SR 141 widening is under construction from 0.6 mile north of the Fulton County line to SR 9.
- PI 141880, STP-2348(3): SR 141 widening is proposed from SR 9 to SR 20. Planning is underway with right-of-way scheduled beyond 2012 (long-range).
- PI MOO3169, OSAP0-M003-00(169): Turn lanes at the intersection of SR 9 and SR 141 are under construction. The lanes will improve LOS for the main turning movements.
- PI 0007999, CSSTP-0007-00(999): Intersection improvements at SR 9 / SR 141 are programmed for construction in FY 2008. Modifications will improve overall efficiency and serve future traffic volumes at the intersection.

Multimodal connectivity is an important goal of GDOT and regional transportation improvements where practical. The SR 9 corridor is not included on the GDOT Statewide Bicycle and

Pedestrian Plan. However, in *BikePed—Atlanta Region Bicycle Transportation and Pedestrian Walkways Plan* (ARC, draft 2007), SR 9 is identified as a *Strategic Bicycle Corridor.* One of the purposes for the strategic bicycle corridors is to serve as regional links to connect Livable Centers Initiative (LCI) study locations. LCI projects have been implemented or are underway in Cumming and several other communities to the south along SR 9. Therefore, providing a safe and efficient bicycle route along SR 9 is recommended as a part of future improvements.

Environmental Justice

In accordance with Title VI of the Civil Rights Act of 1964 and Executive Order 12898, the proposed projects have been analyzed to determine if there would be any disproportionately high and adverse effects to minority and low-income populations and communities. **Table 9** shows the population and income characteristics for the Census block groups adjacent to SR 9 (2000 United States Census) as compared to the population and income characteristics of Forsyth County and Georgia.

Table 9
Comparison of Population and Income Characteristics for the Project Corridor, Forsyth County, and Georgia

Group	Project Corridor	Forsyth County	Georgia
Total Population	34,393	98,407	8,186,453
Race and Ethnicity			
White	30,738 (89.4%)	90,820 (92.3%)	5,128,661 (62.6%)
Black/African-American	158 (0.5%)	426 (0.4%)	2,331,465 (28.5%)
Hispanic	2,907 (8.5%)	5,477 (5.6%)	435,227 (5.3%)
Asian	236 (0.7%)	771 (0.8%)	171,513 (2.1%)
Other[1]	351 (1.0%)	913 (0.9%)	119,587 (1.5%)
Income			
Median Household Income	$73,892	$68,890	$42,433
Percent Below Poverty	4.7%	5.5%	13.0%

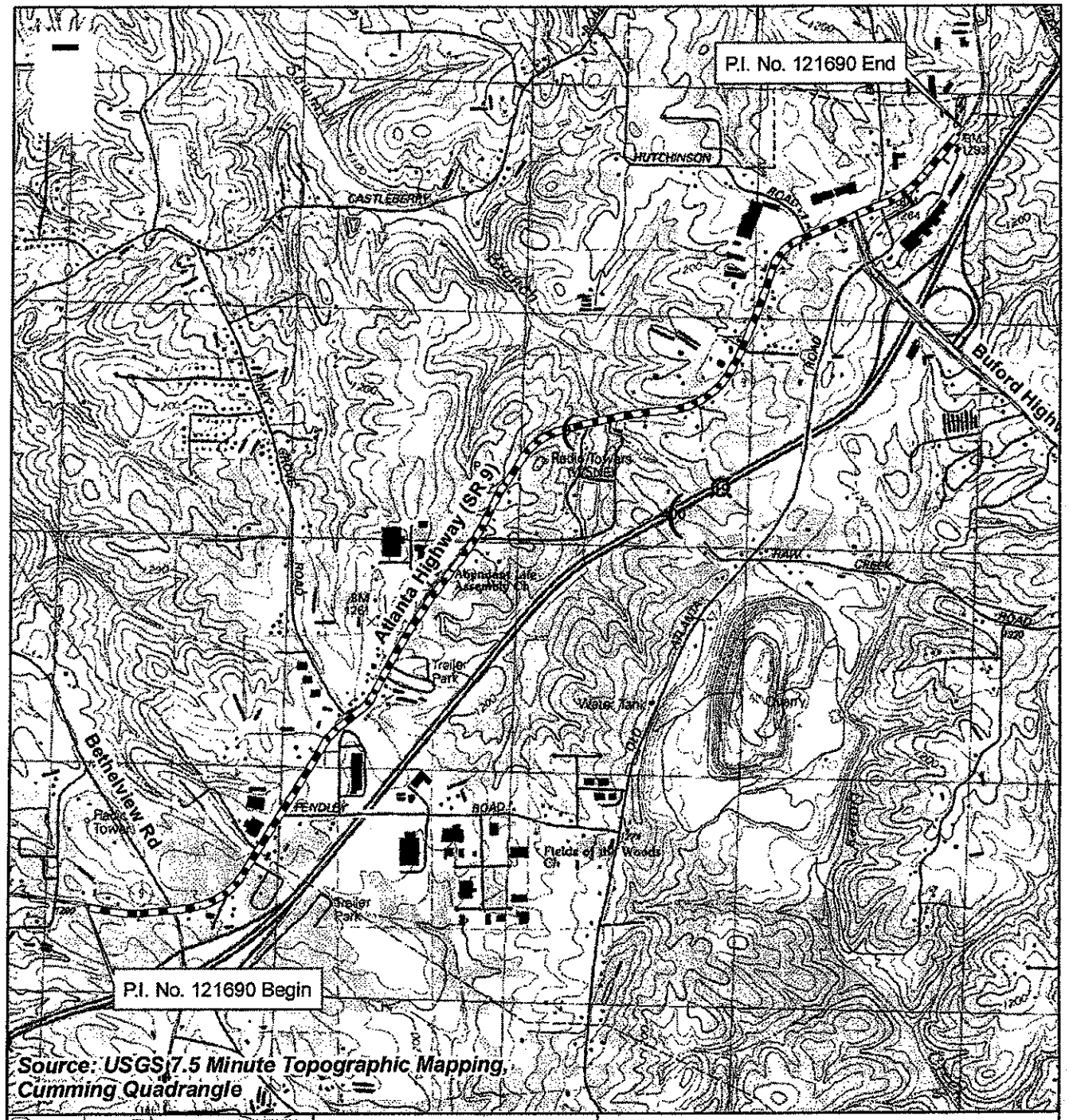
[1] Other includes American Indian or Alaska Native, Native Hawaiian or Pacific Islander, and persons of multiple races.
Source: U.S. Census Bureau, 2000.

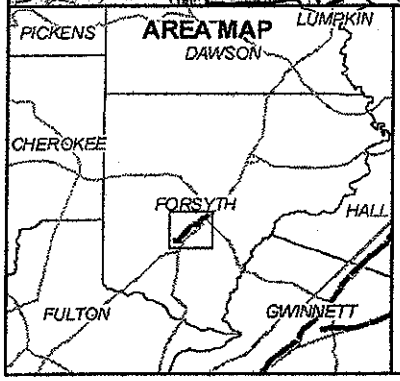
The population along the project corridor is characterized by slightly higher minority population percentages than the population of Forsyth County. The median household income also is higher and roughly 107 percent of the county's median household income (the Department of Housing and Urban Development defines low-income households as those with 80 percent or less of the larger jurisdiction's median household income). Individual Census block analysis yielded three block groups with minority percentages greater than that of Forsyth County and two block groups

with median household incomes appreciably less than that of Forsyth County. Field surveys of the project corridor indicated that minority and low-income populations are concentrated in the mobile home parks near Holly Park Drive, Park Place, and Piney Grove Road.

Potential widening along the existing roadway would not have disproportionately high and adverse human health or environmental impacts on minority or low-income populations. No residential relocations would be required from minority and low-income communities. No particular population would be affected by the physical environmental impacts more than any other. Although minority and low-income residents living in the mobile home park near Piney Grove Road may be particularly vulnerable to increases in noise levels, because there is no buffer between the community and the roadway, the increases in noise would not be disproportionately high or adverse. It is concluded that there would be no disproportionately high or adverse effects to low-income or minority communities/populations by the proposed project.

The relocation of minority or low-income owned businesses may be required for implementation of the proposed project. In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, every effort would be made to assist minority-owned businesses in relocating in the same area, rather than other areas or closing entirely.





Legend

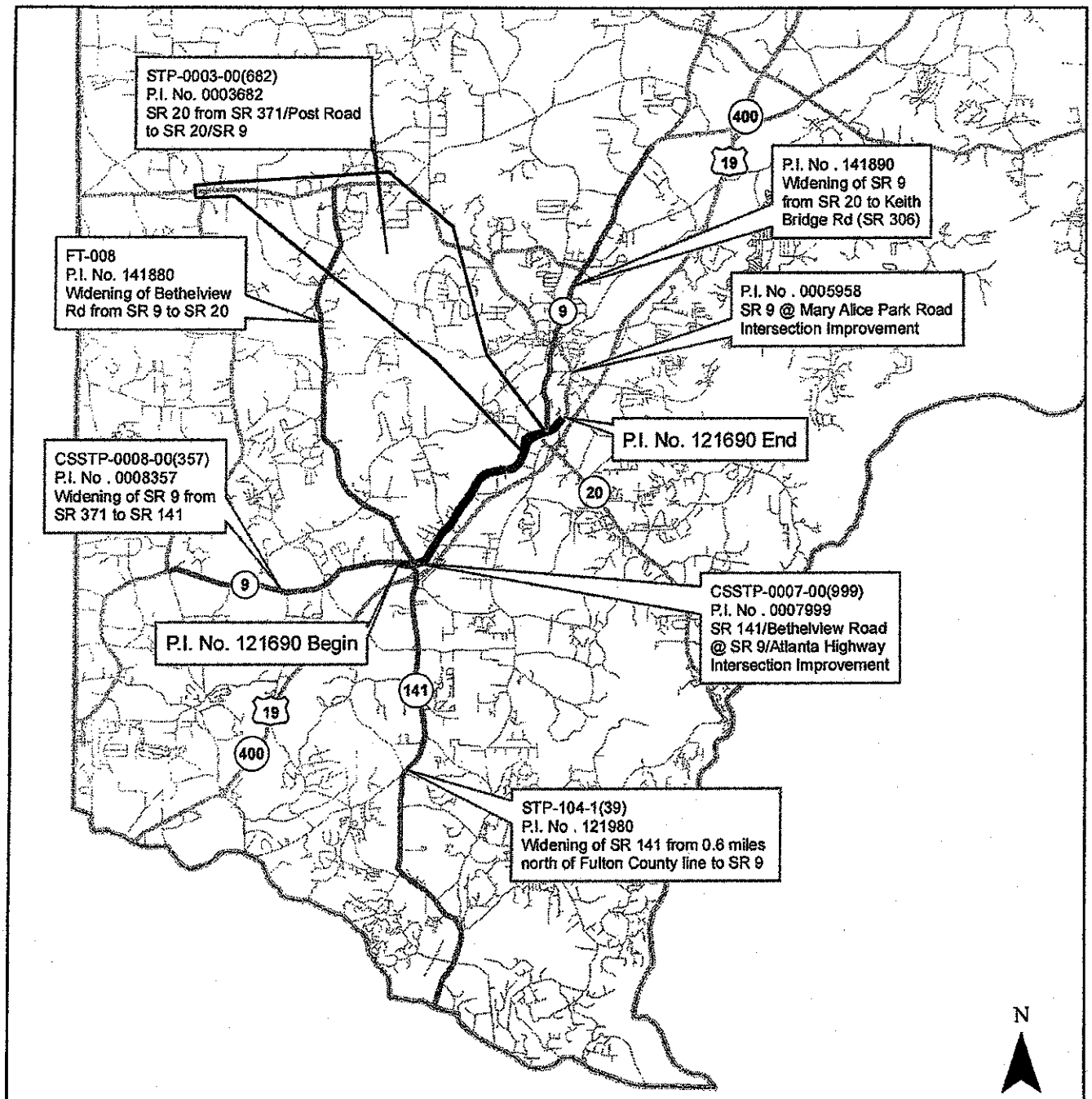
Project Alignment

0 1,000 2,000 Feet

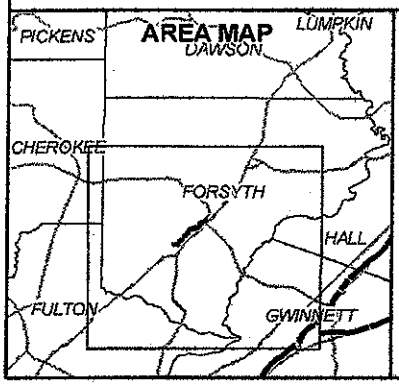
Figure 1: Project Location

Project Number STP-1336(11)
P.I. No. 121690
Forsyth County, Georgia

Widening and Reconstruction of SR 9 from SR 141 North to SR 20



Adjacent Project Data Source: Georgia Department of Transportation



Legend

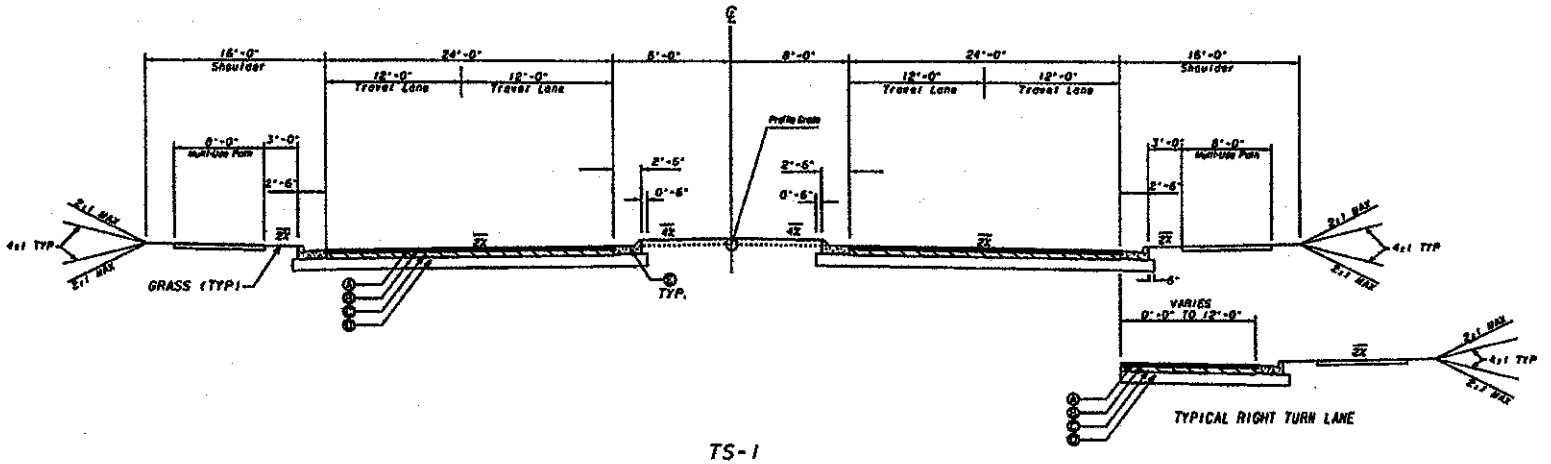
- Adjacent Projects
- Project Alignment
- County Boundary

0 1 2 3 Miles

Figure 2: Adjacent Projects

Project Number STP-1336(11)
P.I. No. 121690
Forsyth County, Georgia

Widening and Reconstruction of SR 9
from SR 141 North to SR 20



TS-1

S.R. 9

TANGENT SECTION

REQUIRED PAVEMENT

- (A) RECYCLED ASPHALTIC CONCRETE 12.5 mm SUPERPAVE MODIFIED, (165 LB/SY)
- (B) RECYCLED ASPHALTIC CONCRETE 19 mm SUPERPAVE, (440 LB/SY)
- (C) RECYCLED ASPHALTIC CONCRETE 25 mm SUPERPAVE, (660 LB/SY)
- (D) GRADED AGGREGATE BASE, 12"
- (E) TYPE 7 CURB & GUTTER
- (F) TYPE 2 CURB & GUTTER

SLOPE CONTROLS		
SLOPE	CUT	FILL
4:1	0-6'	0-10'
3:1	6'-10'	--
2:1*	OVER 10'	OVER 10'

*GUARDRAIL IS REQUIRED ON ALL 2:1 SLOPES

Kimley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
Suite 600, 3686 Holcomb Bridge Road
Norcross, Georgia 30071

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:

TYPICAL SECTIONS

Sheet No. 5-01

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Estimate Report for file "121690 Concept"

Section 1. ROADWAY					
Item Number	**Quantity**	**Units**	**Unit Price**	**Item Description**	**Cost**
150-1000	1	LS	120000.00	TRAFFIC CONTROL - 121690 (3 MILES)	120000.00
201-1500	1	LS	408000.00	CLEARING & GRUBBING - 121690 (51 ACRES)	408000.00
206-0002	500000	CY	5.88	BORROW EXCAV, INCL MATL	2940000.00
310-1101	68650	TN	19.24	GR AGGR BASE CRS, INCL MATL	1320826.00
402-1812	50	TN	65.34	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	3267.00
402-3113	7550	TN	69.44	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	524272.00
402-3121	18300	TN	63.48	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	1161684.00
402-3190	9150	TN	65.49	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	599233.50
413-1000	5000	GL	2.01	BITUM TACK COAT	10050.00
				Section Sub Total:	**$7,087,332.50**

Section 2. ARCH CULVERT					
Item Number	**Quantity**	**Units**	**Unit Price**	**Item Description**	**Cost**
513-9000	1	Lump Sum	250000.00	PRECAST CONCRETE ARCH CULVERT	250000.00
				Section Sub Total:	**$250,000.00**

Section 3. DBL-7 FT X6 FT CULVERT					
Item Number	**Quantity**	**Units**	**Unit Price**	**Item Description**	**Cost**
207-0203	100	CY	56.68	FOUND BKFILL MATL, TP II	5668.00
500-3101	224	CY	600.77	CLASS A CONCRETE	134572.48
511-1000	24525	LB	0.94	BAR REINF STEEL	23053.50
				Section Sub Total:	**$163,293.98**

Section 4. GUARDRAIL					
Item Number	**Quantity**	**Units**	**Unit Price**	**Item Description**	**Cost**
641-1200	7800	LF	16.93	GUARDRAIL, TP W	132054.00
641-5012	24	EA	1801.20	GUARDRAIL ANCHORAGE, TP 12	43228.80
				Section Sub Total:	**$175,282.80**

Section 5. CONCRETE					
Item Number	**Quantity**	**Units**	**Unit Price**	**Item Description**	**Cost**
441-0104	26300	SY	33.67	CONC SIDEWALK, 4 IN	885521.00
441-0740	24000	SY	31.64	CONCRETE MEDIAN, 4 IN	759360.00
441-4020	1600	SY	44.07	CONC VALLEY GUTTER, 6 IN	70512.00
441-6222	30000	LF	19.04	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	571200.00
441-6740	30000	LF	15.02	CONC CURB & GUTTER, 8 IN X 30 IN, TP 7	450600.00
641-1200	7800	LF	16.93	GUARDRAIL, TP W	132054.00
641-5012	24	EA	1801.20	GUARDRAIL ANCHORAGE, TP 12	43228.80
				Section Sub Total:	**$2,912,475.80**

Section 6. DRAINAGE					
Item Number	**Quantity**	**Units**	**Unit Price**	**Item Description**	**Cost**
550-1180	28000	LF	43.65	STORM DRAIN PIPE, 18 IN, H 1-10	1222200.00
550-1240	1210	LF	55.99	STORM DRAIN PIPE, 24 IN, H 1-10	67747.90
550-1300	140	LF	71.89	STORM DRAIN PIPE, 30 IN, H 1-10	10064.60
550-1360	420	LF	88.36	STORM DRAIN PIPE, 36 IN, H 1-10	37111.20
550-1420	140	LF	119.61	STORM DRAIN PIPE, 42 IN, H 1-10	16745.40
550-4224	30	EA	785.94	FLARED END SECTION 24 IN, STORM DRAIN	23578.20
550-4230	2	EA	914.40	FLARED END SECTION 30 IN, STORM DRAIN	1828.80
550-4236	6	EA	1217.68	FLARED END SECTION 36 IN, STORM DRAIN	7306.08
550-4242	2	EA	1616.72	FLARED END SECTION 42 IN, STORM DRAIN	3233.44
668-1100	112	EA	2746.07	CATCH BASIN, GP 1	307559.84

668-2100	10	EA	4070.34	DROP INLET, GP 1	40703.40
				Section Sub Total:	**$1,738,078.86**

Section 7. SIGNING/MARKING/SIGNALS

Item Number	Quantity	Units	Unit Price	Item Description	Cost
636-1033	1750	SF	19.64	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	34370.00
636-2070	2500	LF	8.27	GALV STEEL POSTS, TP 7	20675.00
639-4002	16	EA	5294.75	STRAIN POLE, TP II	84716.00
647-1000	4	LS	75000.00	TRAFFIC SIGNAL INSTALLATION NO - 121690	300000.00
653-0120	80	EA	73.54	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	5883.20
653-0170	25	EA	84.44	THERMOPLASTIC PVMT MARKING, ARROW, TP 7	2111.00
653-1501	35000	LF	0.68	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	23800.00
653-3501	30000	GLF	0.51	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	15300.00
653-6004	4200	SY	2.85	THERMOPLASTIC TRAF STRIPING, WHITE	11970.00
				Section Sub Total:	**$498,825.20**

Section 8. PERMANENT EROSION CONTROL

Item Number	Quantity	Units	Unit Price	Item Description	Cost
700-6910	20	AC	1063.20	PERMANENT GRASSING	21264.00
700-7000	20	TN	59.69	AGRICULTURAL LIME	1193.80
700-7010	50	GL	22.95	LIQUID LIME	1147.50
700-8000	14	TN	286.72	FERTILIZER MIXED GRADE	4014.08
700-8100	1000	LB	2.32	FERTILIZER NITROGEN CONTENT	2320.00
710-9000	10000	SY	4.63	PERMANENT SOIL REINFORCING MAT	46300.00
				Section Sub Total:	**$76,239.38**

Section 9. TEMPORARY EROSION CONTROL

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	10	AC	703.86	TEMPORARY GRASSING	7038.60
163-0240	90	TN	159.79	MULCH	14381.10
163-0300	50	EA	1676.23	CONSTRUCTION EXIT	83811.50
165-0010	28500	LF	0.81	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	23085.00
165-0030	14250	LF	1.63	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	23227.50
165-0101	50	EA	592.87	MAINTENANCE OF CONSTRUCTION EXIT	29643.50
167-1000	2	EA	1207.94	WATER QUALITY MONITORING AND SAMPLING	2415.88
167-1500	36	MO	953.53	WATER QUALITY INSPECTIONS	34327.08
171-0010	28500	LF	1.81	TEMPORARY SILT FENCE, TYPE A	51585.00
171-0030	14250	LF	4.04	TEMPORARY SILT FENCE, TYPE C	57570.00
				Section Sub Total:	**$327,085.16**

Total Estimated Cost: $13,228,613.68

Subtotal Construction Cost	**$13,228,613.68**
E&C Rate 10.0 %	$1,322,861.37
Inflation Rate 0.0 % @ 0.0 Years	$0.00
Total Construction Cost	**$14,551,475.05**
Right Of Way	$33,693,700.00
ReImb. Utilities	$1,648,337.00

ENGINEERING @ 5%: 661,430.68
CONTINGENCY @ 6% = 833,402.66

TOTAL CONST. COST = 14,723,447.02
R/W - 33,693,700.00
REIM. UTILITIES - 1,648,337.00
TOTAL PROJECT COST $50,065,548.02

4/22/2008

Department of Transportation
State of Georgia

Interdepartmental Correspondence

FILE	R/W Cost Estimate	**OFFICE**	Atlanta
		DATE	March 29, 2007
FROM	Phil Copeland, Right of Way Administrator		
TO	To: Babs Abubakari, P.E. State Consultant Design Engineer		
	Attention : Mohsen Tehrani		

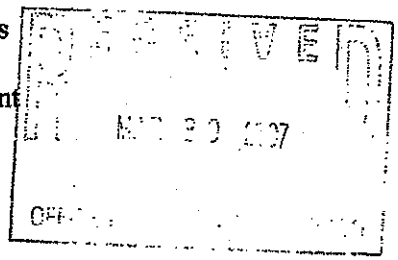
SUBJECT **Preliminary Right of Way Cost Estimate**
Project: STP-1336(11)Forsyth
P.I. No.: 121690
Description: SR 9 Widening / Reconstruction from SR 141 to SR 20

As per your request, attached is a copy of the approved Preliminary Right of Way Cost Estimates on the above referenced projects.

Please note the area of Required R/W was furnished with your request. **Please include total Required R/W areas for the entire corridor in all future requests.**

If you have any questions, please contact Jerry Milligan at the West Annex Right of Way Office at (770) 986-1541.

PC:GAM
Attachments
c: Brian Summers, Engineering Services
Wes Brock, R/W
Windy Bickers, Financial Management
File



Preliminary Right of Way Cost Estimate

Date: March 24, 2007
Project: STP-1336(11), Forsyth
Existing/Required R/W: Varies/Varies
Project Termini: From S.R. 141 to S.R. 20
Project Description: 4 Lane with Median

P.I. Number: 121690
No. Parcels: +/- 110

Land:

Small Commercial			
R/W	141,500 sf.	@ $20.66 /sf	= $2,923,400
Easement	84,765 sf.	@$20.66/sf. x 0.50	= 875,600
Medium Commercial			
R/W	282,477 sf.	@ $8.43 / sf.	= $2,381,300
Easement	141,232 sf.	@ $8.43/sf. x 0.50	= 595,300
Large Commercial			
R/W	99,440 sf.	@ $3.67/sf.	= $ 365,000
Easement	56,550 sf.	@ $3.67/sf. x 0.50	= 103,800

Improvements:
Signs, fencing and site improvements = $1,100,000
5 Buildings, 7 Billboards

Relocation:
0 Residential
4 Business @ $25,000 = $ 100,000 = $ 100,000

Damages:
Consequential 4 Parcels = $1,100,000
Cost to Cure 8 Parcels = $ 160,000 = $1,260,000

Net Cost		$9,704,400
Scheduling Contingency	55 %	$ 5,337,400
Adm/Court Cost	60 %	$ 9,025,100
Inflation Factor	40 %	$ 9,626,800
		$ 33,693,700 Rd.

Total Cost $33,693,700

Prepared By : Dean Williamson
Dean Williamson

Approved :
GDOT R/W

Forsyth County Land Sales

Highest & Best Use	Size (acres)	Value/Square Foot	Sales price
Small Tract Commercial	1.002	$ 20.66	$ 900,000
	1.345	$ 19.63	$1,150,000
	1.168	$ 18.67	$ 950,000
Medium Tract Commercial	5.450	$ 8.43	$2,000,000
	5.30	$ 7.07	$1,631,000
	4.450	$ 5.16	$1,000,000
Large Tract Commercial	24.638	$ 3.44	$3,695,700
	18.330	$ 3.67	$2,925,000
	19.750	$ 3.33	$2,863,750

Letourneau, Bryon

From: Jacques, Jeffrey [Jeffrey.Jacques@dot.state.ga.us]
Sent: Friday, March 02, 2007 10:43 AM
To: Letourneau, Bryon
Cc: Oliver, Robby; McMurry, Russell; Mahoney, Robert; Gafford, Steve
Subject: STP-1336(11) PI 121690, Forsyth County SR 9 - Utility Estimate
Follow Up Flag: Follow up
Flag Status: Completed

Bryon
The following is a Concept Utility Relocation Estimate for the subject project per your request.

Power	
Distribution-	$ 261,000.00
Transmission -	81,200.00
Water	
	707,153.00
Telecom	
Aerial-	110,246.00
Buried-	61,723.00
Poles-	46,400.00
Gas	
6"	141,926.00
2"	6,000.00
Sewer	
	232,689.00
Cable	
	41,760.00
Total Estimated Relocation Cost	**$1,648,337.00**

If any additional information is required please advise

Jeffrey S. Jacques
District One Utilities Engineer
Georgia Department of Transportation
P.O. Box 1057
Gainesville GA 30503
Mail to : jeffrey.jacques@dot.state.ga.us
Office (770) 718-5031
Fax (770) 532-5581

Benefit Cost Analysis Work Sheet
CONGESTION Projects

STP-1336(11)
121690
Forsyth County

Widening and Reconstruction of S.R. 9 from S.R. 141 to S.R. 20

Congestion Benefit = Tb + CMb + Fb

Person Time Savings Benefit (Tb)

*Db (hrs)	0.29
ADT	42,477.00
Tb ($s)	$423,442,593.75

Commercial or Truck Time Savings Benefit (CMb)

Db (hrs)	0.29
% Truck Traffic	0.1
ADT	42,477.00
CMb	$223,731,668.63

Fuel Savings Benefit (Fb)

ADT	42,477.00
Fb ($s)	$147,563,328.13

Total Congestion Benefit	**$794,737,590.50**
Total Project Cost	**$49,893,512.05**
B/C Ratio	**15.93**

*Reduction in delay or **Delay Benefit (D_b)** can be defined as the difference between the peak hour travel time through the corridor without the proposed improvement and the peak hour travel time through the corridor with the proposed improvement.

SR 9 Delay Calculation

SR 9 Build 2032 AM

NB = 29.1 + 18.0 + 19.3 + 9.1 + 55.8 = 131.3 sec. Total Delay

SB = 39.4 + 41.2 + 29.3 + 38.4 + 4.9 = 153.2 sec. Total Delay

284.5 sec. Total Delay

SR 9 Build 2032 PM

NB = 41.6 + 47.2 + 25.0 + 5.0 + 41.3 = 160.1 sec. Total Delay

SB = 38.3 + 32.5 + 25.7 + 19.2 + 10.3 = 126.0 sec. Total Delay

286.1 sec. Total Delay

SR 9 No-Build 2032 AM

NB = 71.0 + 19.0 + 19.9 + 24.5 + 214.1 = 348.5 sec. Total Delay

SB = 36.8 + 58.4 + 87.2 + 0 + 21.1 = 203.5 sec. Total Delay

552.0 sec. Total Delay

SR 9 No-Build 2032 PM

NB = 166.9 + 70.4 + 161.4 + 128.1 + 352.5 = 879.3 sec. Total Delay

SB = 31.7 + 60.8 + 32.9 + 0 + 52.9 = 178.3 sec. Total Delay

1,057.6 sec. Total Delay

SR 9 Build 2032 AM + PM Total Delay = 284.5 + 286.1 = 570.6 sec. Total Delay

SR 9 No-Build 2032 AM + PM Total Delay = 552.0 + 1,057.6 = 1,609.6 sec. Total Delay

Db = 1,609.6 sec. - 570.6 sec. / 3600 sec./hr.

Db = 0.29 hrs.